

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1-14. (Canceled)

15. (Currently Amended) A reinforcing bar binder comprising:
a storing chamber provided in a main body of the reinforcing bar binder for mounting a wire reel around which a wire for binding a reinforcing-bar is wound, the wire being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, and the storing chamber being provided with a detecting device wherein; and

a control circuit that judges a detection output of the detecting device,
the detecting device comprising the storing chamber is provided with a first detecting apparatus and a second detecting apparatus; wherein

the first detecting apparatus detects a first to-be-detected portion provided on the wire reel to detect an amount of rotation of the wire reel; and

the second detecting apparatus ~~counts~~ detects at least one **[[a]]** second to-be-detected portion provided on the wire reel passing the second detecting apparatus during the amount of rotation of the wire reel detected by the first detecting apparatus; and

the control circuit counts second-to-be-detected portions detected by the second detecting apparatus.

16. (Currently Amended) The reinforcing bar binder according to Claim 15, wherein the main body of the reinforcing bar binder is provided with a controller for controlling an amount of feeding of the wire or a twisting torque on the wire depending on ~~the number of times the second-to-be detected portion is~~ portions counted by the ~~second detecting apparatus~~ control circuit.

17. (Currently Amended) The reinforcing bar binder according to Claim 15, wherein the first detecting apparatus is a contact-type sensor and ~~the first-to-be-detected portion is a convex portion or a concave portion which is detected by the contact-type sensor, while the second detecting apparatus is a non-contact type sensor and the second to-be-detected portion is a mark which is detected by the non-contact type sensor.~~

18. (Currently Amended) The reinforcing bar binder according to Claim 16, wherein the first detecting apparatus is a contact-type sensor and ~~the first-to-be-detected portion is a convex portion or a concave portion which is detected by the contact-type sensor, while the second detecting apparatus is a non-contact type sensor and the second to-be-detected portion is a mark which is detected by the non-contact type sensor.~~

19. (Currently Amended) A wire reel utilized in a reinforcing bar binder comprising a control circuit and a storing chamber provided in a main body of the reinforcing bar binder for mounting the wire reel around which a wire for binding a

reinforcing-bar is wound, the wire being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, wherein

the storing chamber is provided with a first detecting apparatus and a second detecting apparatus;

the wire reel is provided with a first to-be-detected portion and a second to-be-detected portion coupled to the control circuit;

the first to-be-detected portion is detected by the first detecting apparatus to detect an amount of rotation of the wire reel; and

the second to-be-detected portion passing the second detecting apparatus during the amount of rotation of the wire reel detected by the first detecting apparatus is counted by the ~~second detecting apparatus~~ control circuit.

20. (Currently Amended) The wire reel according to Claim 19, wherein the first detecting apparatus is a contact-type sensor and ~~the first to-be-detected portion is a convex portion or a concave portion which is detected by the contact type sensor,~~ while the second detecting apparatus is a non-contact type sensor and ~~the second to-be-detected portion is a mark which is detected by the non-contact type sensor.~~

21. (Previously Presented) The wire reel according to Claim 19, wherein the wire reel is provided with a flange and a round concave portion formed on a central portion of the flange, and

the first to-be-detected portion is formed on the flange and the second to-be-detected portion is housed within the round concave portion.

22. (Previously Presented) The wire reel according to Claim 20, wherein the wire reel is provided with a flange and a round concave portion formed on a central portion of the flange, and

the first to-be-detected portion is formed on the flange and the second to-be-detected portion is housed within the round concave portion.

23. (Currently Amended) A wire-reel identifying method utilized with a reinforcing bar binder comprising a storing chamber provided in a main body of the reinforcing bar binder for mounting a wire reel around which a wire for binding a reinforcing-bar is wound, the wire being fed by rotating the wire reel and being twisted for binding the reinforcing bar after it is wound around the reinforcing bar, the method comprising:

~~counting with a second detecting apparatus~~ a second to-be-detected portion passing ~~the~~ a second detecting apparatus during an amount of rotation of the wire reel detected by a first detecting apparatus.

24. (Previously Presented) The wire-reel identifying method according to Claim 23, further comprising:

adjusting an amount of feeding of the wire or a twisting torque on the wire in accordance with a specific wire reel identified by the method.

25. (Previously Presented) The wire-reel identifying method according to Claim 23, further comprising:

providing with the wire reel a flange and a round concave portion formed on a central portion of the flange; and

forming the first to-be-detected portion on the flange and housing the second to-be-detected portion within the round concave portion.

26. (Previously Presented) The wire-reel identifying method according to Claim 24, further comprising:

providing with the wire reel a flange and a round concave portion formed on a central portion of the flange; and

forming the first to-be-detected portion on the flange and housing the second to-be-detected portion within the round concave portion.

27. (Currently Amended) The wire-reel identifying method according to Claim 23, wherein the first detecting apparatus is a contact-type sensor and ~~the first to-be-detected portion is a convex portion or a concave portion which is detected by the contact type sensor,~~ while the second detecting apparatus is a non-contact type sensor and ~~the second to-be-detected portion is a mark which is detected by the non-contact type sensor.~~

28. (Currently Amended) The wire-reel identifying method according to Claim 24, wherein the first detecting apparatus is a contact-type sensor and ~~the first to-be-detected portion is a convex portion or a concave portion which is detected by the contact type sensor,~~ while the second detecting apparatus is a non-contact type

~~sensor and the second to be detected portion is a mark which is detected by the non-contact type sensor.~~

29. (Currently Amended) The wire-reel identifying method according to Claim 25, wherein the first detecting apparatus is a contact-type sensor and ~~the first to be detected portion is a convex portion or a concave portion which is detected by the contact type sensor,~~ while the second detecting apparatus is a non-contact type sensor and ~~the second to be detected portion is a mark which is detected by the non-contact type sensor.~~

30. (Currently Amended) The wire-reel identifying method according to Claim 26, wherein the first detecting apparatus is a contact-type sensor and ~~the first to be detected portion is a convex portion or a concave portion which is detected by the contact type sensor,~~ while the second detecting apparatus is a non-contact type sensor and ~~the second to be detected portion is a mark which is detected by the non-contact type sensor.~~

31. (Currently Amended) A wire-reel identifying method comprising:
providing a first to-be-detected portion and a second to-be-detected portion on a wire reel;
detecting the first to-be-detected portion with a first detecting apparatus to detect an amount of rotation of the wire reel; and
~~counting~~ detecting the second to-be-detected portion with a second detecting apparatus during rotation of the wire reel; and

counting with a control circuit the second to-be-detected portion
detected with the second detecting apparatus to detect a type of the wire reel.

32. (Previously Presented) The wire-reel identifying method according to Claim 31, further comprising:

adjusting a feed amount of a wire on the wire reel or a twisting torque on the wire in accordance with a specific wire reel identified by the method.

33. (Previously Presented) The wire-reel identifying method according to Claim 31, further comprising:

providing with the wire reel a flange and a round concave portion formed on a central portion of the flange; and

forming the first to-be-detected portion on the flange and housing the second to-be-detected portion within the round concave portion.

34. (Currently Amended) The wire-reel identifying method according to Claim 31, wherein the first detecting apparatus is a contact-type sensor and ~~the first to-be-detected portion is a convex portion or a concave portion which is detected by the contact type sensor, while~~ the second detecting apparatus is a non-contact type sensor and ~~the second to-be-detected portion is a mark which is detected by the non-contact type sensor.~~

35. (New) The wire reel according to Claim 19, further comprising
a pair of flanges for receiving the wire therebetween; and

a boss portion formed on one of the flanges, wherein the first to-be-detected portion is formed outside the boss portion and the second to-be-detected portion is formed inside the boss portion.

36. (New) The wire reel according to Claim 35, wherein the boss portion surrounds a round concave portion formed in a hub portion of the wire reel, and the round concave portion houses at least one fixation shaft having a light reflecting mark forming the second to-be-detected portion.

37. (New) The wire reel according to Claim 36, wherein the boss portion has a stepped concave portion at an inner peripheral edge, and the stepped concave portion has a depth which substantially reaches the light reflecting mark provided on the fixation shaft.

38. (New) The wire reel according to Claim 35, wherein the first to-be-detected portion is formed by a protrusion on an outer peripheral edge of the boss portion.

39. (New) The wire reel according to Claim 38, wherein the protrusion is formed to have a trapezoid shape and includes inclined edges at its opposite sides.

40. (New) The reinforcing bar binder according to Claim 15, wherein the control circuit receives a first signal when the first detecting apparatus detects a

previous first to-be-detected portion and a second signal when the first detecting apparatus detects a next first-to-be-detected portion.